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| 10/798,187 | 03/10/2004 | Craig P. Sayers | 200316515-1 | 5311 |
| <div>22879 7590 10/31/2007</div> <div>HEWLETT PACKARD COMPANY</div> <div>P O BOX 272400, 3404 E. HARMONY ROAD</div> <div>INTELLECTUAL PROPERTY ADMINISTRATION</div> <div>FORT COLLINS, CO 80527-2400</div> | | | | |
| | | | <div>EXAMINER</div> <div>FIELDS, COURTNEY D</div> | |
| | | | <div>ART UNIT</div> <div>2137</div> | <div>PAPER NUMBER</div> |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/798,187 | SAYERS ET AL. | |
| | Examiner | Art Unit | |
| | Courtney D. Fields | 2137 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-34 are pending.

Response to Arguments

2. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection, Massarenti (Pub No. 2004/0244012).

Specification

3. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

See page 6, Sections 0024-0025, page 7, Section s0028-0029, page 9, Section 0034, page 17, Sections 0063-0064, page 19, Sections 0067-0068, etc.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Massarenti (Pub No. 2004/0244012).

Referring to the rejection of claims 1 and 26, Massarenti discloses a method and computer readable media of processing information representing a graph, comprising:

serializing each of multiple statements; (See page 2, Section 0032)

using a digital processor to independently compute a hash value for each of the multiple statements; (See page 3, Section 0041)

and applying a commutative function to each hash value, to obtain an aggregate hash value representing all of the multiple statements (See page 3, Section 0048)

Referring to the rejection of claim 2, Massarenti discloses the claimed limitation wherein identifying at least one attribute of the multiple statements; and using the digital processor to digitally sign a value dependent upon both of the aggregate hash value and the attribute (See page 9, Section 0161)

Referring to the rejection of claims 3 and 27, Massarenti discloses the claimed limitation wherein identifying as an attribute the number of statements that have been hashed and that are represented by the aggregate hash value (See page 9, Section 0161); and digitally signing a value dependent upon both of the aggregate hash value and the number of statements represented by the aggregate hash value. (See page 6, Section 0096)

Referring to the rejection of claim 4, Massarenti discloses the claimed limitation wherein comprising adding a new statement to the multiple statements by:

identifying a blank node; (See page 4, Section 0057)

assigning a label to the identified blank node; (See page 4, Section 0058)

and creating the additional statement in a manner that sets forth association of the blank node with the label (See page 4, Section 0060)

Referring to the rejection of claim 5, Massarenti discloses the claimed limitation wherein said method further comprises using the digital processor to compute a hash value for the additional statement to thereby create an incremental hash value (See page 10, Section 0174), and combining the incremental hash value with the aggregate hash value using a function which is both commutative and associative; and computing a hash value includes applying a SHA-1 hash algorithm to obtain the hash value of each statement (See page 8, Section 0139)

Referring to the rejection of claims 6 and 28, Massarenti discloses the claimed limitation wherein identifying a secret key and using the digital processor to digitally sign a value dependent upon both of an aggregate hash value and the secret key (See page 8, Section 0132)

Referring to the rejection of claim 7, Massarenti discloses the claimed limitation wherein identifying a public key; and using the digital processor to authenticate the graph, including using the public key to decrypt a verification hash, comparing the aggregate hash value to the verification hash, and determining that the graph is authentic in dependence on the comparison (See page 8, Section 0135)

Referring to the rejection of claim 8, Massarenti discloses the claimed limitation wherein the function is based upon addition within a finite field. (See page 3, Section 0046)

Referring to the rejection of claim 9, Massarenti discloses the claimed limitation wherein applying the function to each hash value includes initiating the aggregate hash value as a constant, incrementally applying the function to each therefrom a new

aggregate hash value, and repeating application of the function until all hashed statements and the constant are represented by the aggregate hash value; and wherein the function is both associative and commutative. (See page 4, Section 0071)

Referring to the rejection of claim 10, Massarenti discloses the claimed limitation wherein the constant is zero. (See page 6, Section 0099)

Referring to the rejection of claim 11, Massarenti discloses the claimed limitation wherein the constant is a secret key, and repeating the application of the function yields an aggregate hash value that is dependent upon both of the secret key and all hashed statements (See page 8, Section 0132)

Referring to the rejection of claims 12, Massarenti discloses a method of processing data representing a graph, the graph being stored on machine-readable media, said method comprising:

determining a first hash value representing the graph; (See page 2, Section 0032)

using a digital processor to compute a second hash value that represents an additional statement; (See page 3, Section 0041)

and computing an aggregate hash value that is a function of each of the first hash value and the second hash value, where the function is commutative. (See page 3, Section 0048)

Referring to the rejection of claim 13, Massarenti discloses the claimed limitation wherein determining a first hash value includes retrieving data representing the graph from machine-readable media and also retrieving a verification hash value from

machine-readable media (See page 10, Section 0178), verifying authenticity of the data representing the graph by locally computing a hash value based upon retrieved data representing the graph (See page 5, Section 0087), and determining whether the verification hash value matches the locally-computed first hash value, and if the authenticity of the data is verified, using the matched results as the first hash value and otherwise generating an error (See page 6, Section 0089); and adding a new statement to the data by storing the new statement on the machine-readable media, by computing as the second hash value an incremental hash value representing the new statement (See page 6, Section 0095), and by storing the aggregate hash value on the machine-readable media in association with the graph, where the aggregate hash value represents addition of the first hash value and the second hash value. (See page 6, Section 0096)

Referring to the rejection of claim 14, Massarenti discloses the claimed limitation wherein retrieving the first hash value from remote machine-readable media; (See page 2, Section 0032)

adding the statement by causing the remote machine-readable media to store the additional statement in association with the graph; (See page 6, Section 0099) computing as the second hash value an incremental hash value representing the additional statement; (See page 3, Section 0041)

and digitally signing the aggregate hash value and causing the remote machine-readable media to store the digitally signed aggregate hash value in association with the data representing the graph (See page 3, Section 0048)

Referring to the rejection of claim 15, Massarenti discloses the claimed limitation wherein determining an attribute of all data representing the graph, including the additional statement; generating an aggregate value dependent upon both the aggregate hash and the attribute; and digitally signing the aggregate value to thereby generate a digital signature (See page 6, Section 0100)

Referring to the rejection of claims 16 and 21, Massarenti discloses an apparatus and system, comprising instructions stored on machine readable media, the instructions when executed causing a digital processor to:

compute a hash of each one of multiple statements representing a graph; (See page 3, Section 0041)

apply a commutative function to each of the multiple hashes to thereby yield an aggregate hash representing all of the multiple hashes; (See page 3, Section 0048)

and digitally sign the aggregate hash (See page 6, Section 0096)

Referring to the rejection of claims 17 and 22, Massarenti discloses the claimed limitation wherein the instructions further cause the digital processor to:

compute at least one identifier selected to represent all of the statements represented by the aggregate hash; (See page 10, Section 0174)

and digitally sign the aggregate hash and the at least one identifier. (See page 6, Section 0096)

Referring to the rejection of claim 18 and 23, Massarenti discloses the claimed limitation wherein the apparatus permits one to amend resource description framework

(RDF) data stored in a web-accessible data store, and to digitally sign that data, said instructions further causing the digital processor to: (See page 5, Section 0085)

compute a hash of the new statement; (See page 6, Section 0095)

combine the hash of the new statement with a hash representing an existing RDF graph using the function, where the function is both commutative and associative, to thereby obtain the aggregate hash; (See page 6, Section 0095)

determine an aggregate number of statements representing the RDF graph together with the new statement; (See page 6, Section 0096)

and digitally sign both the aggregate hash and the number (See page 6, Section 0096)

Referring to the rejection of claim 19 and 24, Massarenti discloses the claimed limitation wherein the apparatus permits one to authenticate RDF data, said instructions further causing the digital processor to:

retrieve a set of statements from a remote data store; (See page 11, Sections 0183)

retrieve data representing a verification hash from the remote data store; (See page 11, Sections 0183)

and authenticating the statements by individually computing a hash of each statement, combining together the hash for each statement to obtain an aggregate hash, comparing the aggregate hash with the verification hash, and determining authenticity based on the comparison (See page 11, Section 0184)

Referring to the rejection of claim 20 and 25, Massarenti discloses the claimed limitation wherein the instructions further cause the digital processor to authenticate the RDF data by further:

retrieving from the remote data store a digitally-signed identifier, computing a locally-derived identifier based on the aggregate set of statements retrieved from the remote data store, and determining whether the digitally-signed identifier and the locally-derived identifier match; (See page 11, Sections 0183)

and determining authenticity based on comparison of both the verification hash with the aggregate hash, and the digitally-signed identifier with and locally-derived identifier (See page 11, Section 0184)

Referring to the rejection of claim 29, Massarenti discloses a method of doing business by providing verification services for descriptive statements about electronic resources, said method comprising:

upon an aggregate hash value created by applying a commutative function to multiple independent hash values, each independent hash value based upon a subset of the descriptive statements, (See page 9, Section 0161)

and at least one attribute representing the set of all descriptive statements represented by the aggregate hash value; and providing the digital signature in response to remote request that calls for verification of descriptive statements in the hash. (See page 6, Section 0096)

Referring to the rejection of claim 30, Massarenti discloses the claimed limitation wherein the number of statements in each subset is one; and the at least one attribute

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includes the number represented by the aggregate hash value of descriptive statements
(See page 9, Section 0161)

Referring to the rejection of claim 31, Massarenti discloses the claimed limitation wherein further comprising forced labeling of blank nodes, where each blank node is labeled and a descriptive statement identifying each label is included in the set of descriptive statements (See page 4, Sections 0057-0060)

Referring to the rejection of claim 32, Massarenti discloses the claimed limitation wherein further comprising:

hosting the descriptive statements represented by the hash; (See page 3, Section 0038)

hosting among the descriptive statements an identification statement that identifies at least one attribute selected from the set of creator identity, version number, copyright holder, version date, source identity, original creator identity, revision creator identity and owner identity; (See page 3, Section 0039)

and verifying the identification statement upon request. (See page 3, Section 0040)

Referring to the rejection of claim 33, Massarenti discloses A method of doing business by providing verification services for descriptive statements about electronic resources, said method comprising:

receiving a digital signature and a set of descriptive statements; (See page 8, Section 0139)

including creating an aggregate hash value by applying a commutative function to multiple independent hash values, each independent hash value based upon a subset of the descriptive statements, decrypting the digital signature and comparing information represented by the signature with the aggregate hash value, to detect whether there is a match condition; (See page 8, Section 0135)

and providing a verification response upon detection of the match condition, and providing a failure response if a match condition is not detected. (See page 8, Section 0132)

Referring to the rejection of claim 34, Massarenti discloses the claimed limitation wherein: calculating at least one attribute representing the set of all descriptive statements represented by the aggregate hash value; and decrypting the digital signature and comparing information includes comparing information represented by the signature with the at least one attribute, to detect whether there is a match condition (See page 8, Section 0135)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney D. Fields whose telephone number is 571-272-3871. The examiner can normally be reached on Mon - Thurs. 6:00 - 4:00 pm; off every Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on 571-272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


cdf

October 27, 2007


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